Postpartum Psychosis in Bipolar Disorder: No Association with Personality, Cognitive Style and Temperament

Imogen Webb[1], Katherine Gordon-Smith[2], Amy Perry[2], Christine Fraser[3], Liz Forty[3], Nick Craddock[3], Ian Jones[2,3], Lisa Jones[2]

[1]College of Medical and Dental Sciences, University of Birmingham, UK
[2]Department of Psychological Medicine, University of Worcester UK
[3]Division of Psychological Medicine and Clinical Neurosciences, Cardiff University UK

Introduction:

- Postpartum psychosis (PP) is an acute episode of mania or psychosis developing soon after childbirth, typically within the first few weeks[1].
- PP affects 1-2 per 1000 births in the general population[1], and this is dramatically increased in women who have bipolar disorder (BD) where 1 in 5 births is affected by PP[2].
- Previous literature shows associations between BD and a range of personality traits (neuroticism[3], impulsivity[4]), cognitive styles (low self-esteem, dysfunctional attitudes)[5] and affective temperaments (cyclothymic, depressive)[6].
- As women with BD are at increased risk of PP it is important to investigate whether any of these factors confer vulnerability to PP over and above their known association with BD. This topic has not previously been investigated.
- Potential implications include improved understanding of the aetiology of PP and BD and improved identification of women at high risk of PP.

Aim:

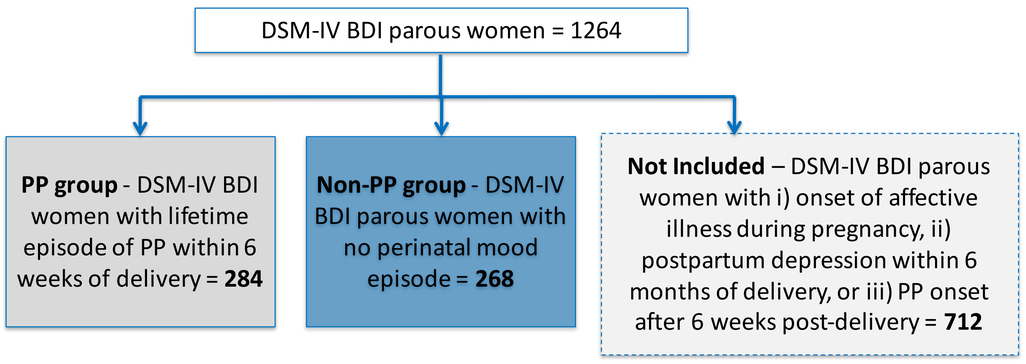
To determine whether BD-related personality traits, cognitive styles and affective temperaments are associated with experiencing PP in parous women with BD.

Methods:

Study design and population

- Data were collected by the Bipolar Disorder Research Network (BDRN) as part of a large ongoing study into the aetiology of BD.
- Participants were recruited systematically (National Health Service (NHS) psychiatric services) and non-systematically (advertisements) throughout the UK.
- Data analysis was carried out on two sub-sets of parous women with bipolar I disorder (BDI): PP group and non-PP group (see Figure 1).

Figure 1: Flow chart showing the process used to define the two groups



Participant Assessment

- Demographic and lifetime clinical history data obtained from participants by a trained BDRN researcher using a semi-structured interview (Schedules for Clinical Assessment in Neuropsychiatry; SCAN), and from psychiatric case-notes.
- Information obtained on lifetime history of pregnancies and lifetime occurrence of pregnancy and postpartum psychiatric episodes.

Questionnaires

Self-report questionnaire measures of personality, cognitive style and temperament:

- **Personality**: i) Eysenck Personality Questionnaire (EPQ) neuroticism subscale (e.g. *Are your feelings hurt easily?*), ii) Barratt Impulsiveness Scale (e.g. *I say things without thinking*).
- **Cognitive style**: i) Rosenberg Self-Esteem Scale (e.g. *I certainly feel useless at times*), ii) Dysfunctional Attitudes Scale (e.g. *People will probably think less of me if I make a mistake*).
- **Temperament**: Temperament Evaluations of Memphis, Paris, Pisa and San Diego (TEMPS) cyclothymic (e.g. *My mood often changes for no reason*) and depressive (e.g. *I give up easily*) subscales.

Participants also completed the Beck Depression Inventory (BDI) and Altman Mania Scale (AMS) at the same time as the above questionnaires to measure current mental state.

Statistical analysis

- Questionnaire scores were compared between the PP and non-PP groups using Mann-Whitney U tests.
- Potential demographic, clinical and pregnancy-related confounders were adjusted for using binary logistic regression.
- All analyses completed using SPSS for Windows (version 18).

Results:

- Key demographic, lifetime clinical and pregnancy-related variables were compared between the PP and non-PP groups (see Table 1).
- BDI and AMS scores differed significantly between the two groups.

Table 1: Summary of demographic, clinical and pregnancy-related variables between the PP and non-PP groups (P-values in bold indicate variable differed significantly between the two groups)

	PP	Non-PP	P-Value
Method of Recruitment, n (%)			
Systematic	71 (25.4)	109 (41.0)	**<0.0001**
Non-systematic	208 (74.6)	157 (59.0)	
Age at interview, years			
Median	47	53	**<0.0001**
IQR (range)	15 (21-79)	16 (24-76)	
Highest educational attainment, n (%)			
No higher education	143 (53.6)	168 (64.1)	**0.014**
Higher education	124 (46.4)	94 (35.9)	
Marital History, n (%)			
Married	274 (96.8)	256 (95.9)	0.556
Never married	9 (3.2)	11 (4.1)	
Age of BD onset, years			
Median	22	30	**<0.0001**
IQR (range)	10 (9-39)	19 (7-68)	
Number of episodes of mania			
Median	5	4	0.104
IQR (range)	7 (1-100)	5 (1-100)	
Number of episodes of depression			
Median	5	5	0.725
IQR (range)	8 (0-100)	8 (0-100)	
Number of pregnancies			
Median	2	2	0.729
IQR (range)	1 (1-8)	1 (1-11)	

- Univariate analyses revealed no statistically significant difference between the PP and non-PP groups for any of the questionnaire measures (see Table 2).

Table 2: Questionnaire scores in the PP and non-PP groups

	PP	Non-PP	P-value
EPQ-Neuroticism score			
Median	15	15	0.470
IQR (range)	9 (0-23)	9 (0-23)	
Barratt Impulsiveness Scale total score			
Median	63	64.5	0.409
IQR (range)	15 (44-106)	17 (39-99)	
Rosenberg Self-Esteem Scale total score			
Median	30	28.5	0.410
IQR (range)	8 (12-40)	9 (13-40)	
Dysfunctional Attitudes Scale total score			
Median	90.5	86	0.603
IQR (range)	29 (46-152)	29 (40-157)	
TEMPS Cyclothymic sub-score			
Median	5	6	0.284
IQR (range)	8 (0-12)	8 (0-12)	
TEMPS Depressive sub-score			
Median	1	1	0.182
IQR (range)	3 (0-8)	4 (0-8)	

- Following multivariate analysis (controlling for method of recruitment, age at interview, highest educational attainment, age of BD onset and BDI and AMS scores) no statistically significant difference was observed between the groups on any questionnaire measure.

Conclusions:

- No personality, cognitive style or temperament characteristics were identified that are associated with history of PP in women with BD. Therefore, these traits should not play a key role when evaluating risk of PP in women with BD considering pregnancy.
- These psychological traits that are associated with the BD diathesis in general are not associated with the onset of PP specifically. The results are consistent with the hypothesis that biological factors play a more central role in the triggering of PP early in the postpartum.

Limitations

- Limited aspects of personality, cognitive style and affective temperament measured.
- Self-report questionnaires introduce possibility of responder bias.

Future Research

- Longitudinal prospective study design to gather contemporaneous rather than retrospective data.

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moodresearch@worc.ac.uk